



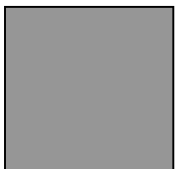



Concept: Tiles and Algebra

Name: _____

OFF-COMPUTER COMPONENT**Instruction:**

Find the area of each of the following shapes.

					
Area is	Area is	Area is	Area is	Area is	Area is

COMPUTER COMPONENT**Instructions:**

Select the computer program *Understanding Algebra* (Neufeld)
 Follow the instructions to the Main Menu.
 Select *Tiles and Algebra* from the Main Menu.

Work through all sections of the following topics **in order**:

- *Area*
- *Introduction to Tiles*
- *Pictures to Words to Algebraic Expressions*
- *Algebraic Expressions to Tiles*
- *Combining Opposites*
- *Summary*
- *Practice Questions*



As you work through the computer exercises, make your own notes on this page in the **SUMMARY** section.

When you reach the end of the section *Practice Questions* on the computer, move on to the **WORKSHEET** portion of this handout.

SUMMARY


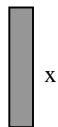
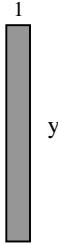
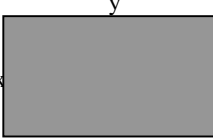

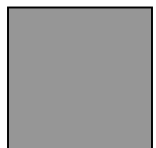
Like tiles are the same size and _____.

Give the tile representation for each term. Be sure to use both red and blue colors.



Term	Tile Representation	Term	Tile Representation
$+ 1$		$- 1$	
x		$- x$	
x^2		$- x^2$	

WORKSHEET

1. Fill in the following chart.

					
Area is	Area is	Area is	Area is	Area is	Area is

2. Fill in the chart.

Tile Representation	Words	Algebraic Expression
	Pick any number. Since we don't know what your number is, we will call it x.	x
	Add 4 to your number.	
	Double the result.	
	Subtract 4.	
	Divide by 2.	
	Subtract your original number.	
	Result :	

3. Draw the appropriate picture for each expression.

Be sure to use red and blue here OR use a shaded tile to represent a positive integer, a non-shaded tile to indicate a negative integer.

(a) $4x - 1$

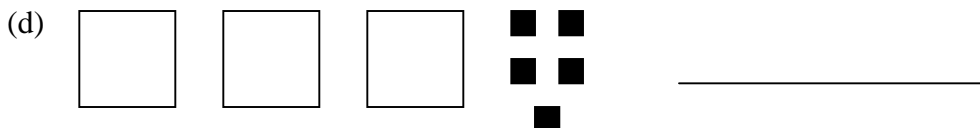
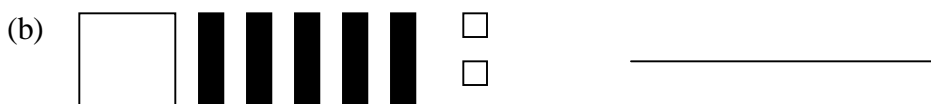
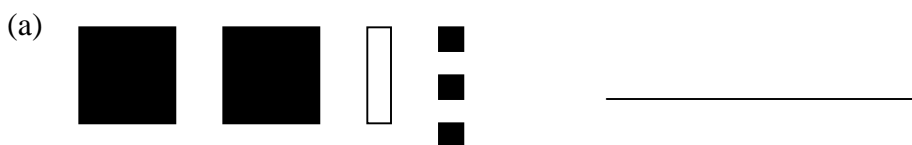
(b) $2x^2 - 3x + 1$

(c) $-4x^2 - 3x - 2$

(d) $3x^2 - 5$

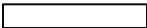
4. Give the algebraic expression for each picture.

Note: Consider a shaded tile to indicate positive, a non-shaded tile to indicate negative



5. Fill in the blanks.

(a) The opposite of $(+1)$ is _____.

(b) The opposite of  is _____.

(c) Adding  and  produces a result of _____.

(d) Adding  and  produces a result of _____.

6. Write instructions for each of the following algebraic expressions.

Algebraic Expression	Instructions
(a) $4x$	four times a number
(b) $2y + 5$	
(c) $3p - 4$	
(d) $3(x + y)$	
(e) $0.5x$	

7. If Josh's father is four times as old as Josh, then write algebraic expressions for each of the following.

- (a) Josh's present age...
- (b) Josh's father's present age...
- (c) Josh's age 4 years from now...
- (d) Josh's father's age 4 years from now...
- (e) (design your own question)

8. Write algebraic expressions for each of the following phrases.

- (a) 4 more than a certain number.
- (b) Half a number increased by 2.
- (c) 13 decreased by 5 times a number.
- (d) The area of a rectangle with length 4 units longer than its width.

9. The four jobs at Neuman Learning Systems offer different rates for regular hours as well as for overtime hours. The following is information for one week's work. Complete the table.

job	regular hourly rate	number of regular hours	regular pay	overtime hourly rate	number of overtime hours	overtime pay	TOTAL PAY
programmer	\$14	x		\$15	y		
reviewer	\$10	x		\$11	y		
webmaster	\$13	x		\$15	y		
graphic artist	\$12	x		\$14	y		

Therefore, the total weekly payroll for Neuman Learning Systems =